Biofiltration with Elevated Underdrain

More of the runoff that flows into the basin and does not overflow into an overflow structure is abstracted from the stormsewer system through infiltration or evapotranspiration compared to bioretention with an underdrain at the bottom of the basin; the remainder is filtered by the growing medium but then leaves via an elevated underdrain.

Because elevating the underdrain increases hydraulic retention time, it (1) allows for **more infiltration and evaporation** compared to biofiltration with underdrain at the bottom, but likely some flow short circuits media below underdrain invert, resulting in slightly less volume and water quality benefits than biofiltration with an underdrain with upturned elbow (2) improves **thermal pollution abatement** and **nitrogen removal** (longer retention time allows runoff to cool more before discharge and allows denitrification to occur under anoxic condition).

With an elevated outlet, biorfiltration can be added as retrofits in more areas with restricted outlet depth.

Requires more aggregate than biofiltration with upturned elbow

In-situ soils must have adequate permeability for an elevated underdrain to be beneficial.

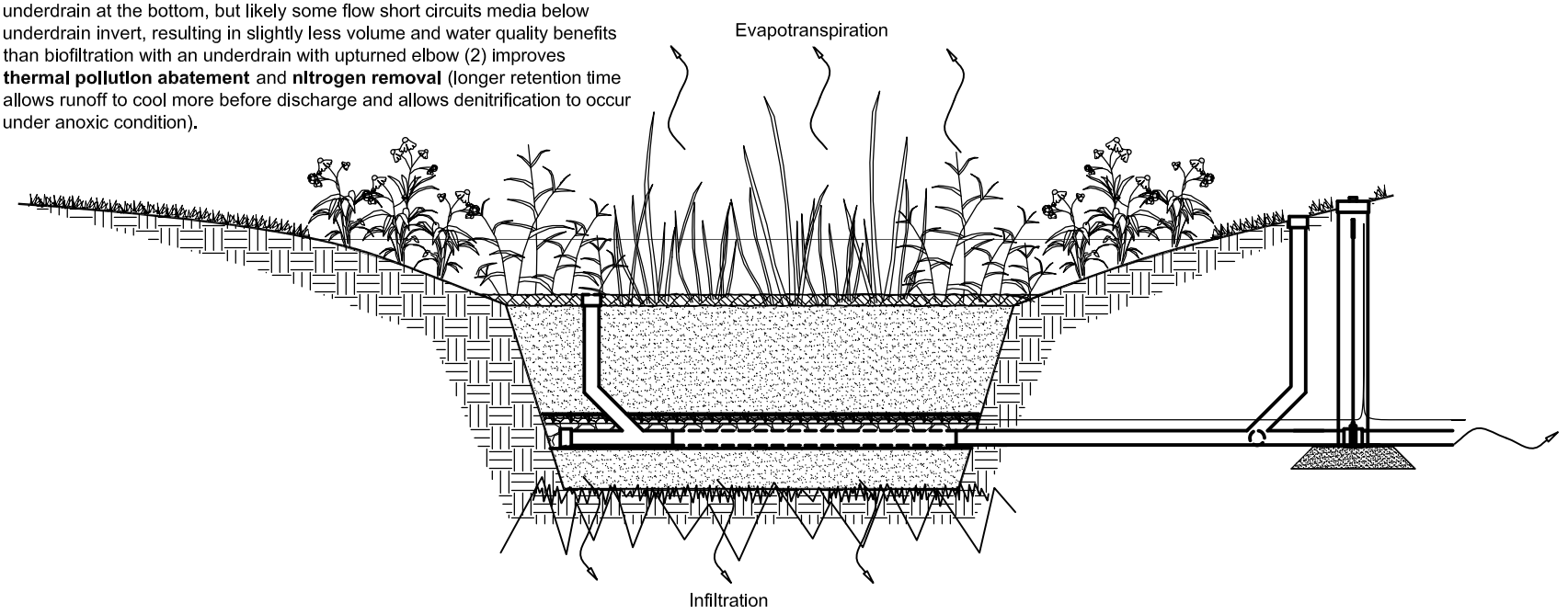

Figure 2-3: Biofiltration with Elevated Underdrain

Not To Scale

NO. | REVISION DESCRIPTION | DATE | BY

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota

Print Name:_____

Sign Name:_____ License No._____

Date_____

Date | Designed By | Drawn By

NOT FOR CONSTRUCTION PURPOSES

Sheet No. of Sheets